

Harvard University
John F. Kennedy School of Government
Controlling the World's Most Dangerous Weapons
HKS IGA-232, GOV 1735
Fall 2019
Matthew Bunn
William Tobey

Time: Tuesdays and Thursdays, 10:15-11:30 AM

Location: Weil Town Hall

Objective

Preventing nuclear war is one of the truly existential challenges facing the human species – but the danger is rising, as tensions among nuclear powers increase, nuclear agreements are challenged, and new technologies and arms competitions create new uncertainties. From Iran to North Korea, from U.S.-Russian and U.S.-Chinese nuclear competition to Syria's deadly chemical assaults, decisions about nuclear, chemical, and biological weapons can make the difference between war or peace and between safety or grave danger for people around the world. This course will give students an understanding of these weapons and the global efforts to prevent their use and control their spread. The course covers policy tools from treaties and diplomacy to sanctions and war. This year, particular attention will be paid to emerging great-power competition and its implications for deterrence and arms control. Students will learn to use an integrated, risk-informed approach to assessing policy options when difficult choices need to be made in the face of large uncertainties. This will help prepare students for careers dealing with choices about these deadly weapons.



Office Hours and Contact Information

Matthew Bunn will have office hours from 2-4 on Tuesdays and Fridays in Belfer 325. Please make appointments through his assistant, [Minoo Ghoreishi](#), phone: 617-384-7329. Prof. Bunn's phone is 617-495-9916, and his e-mail is matthew_bunn@harvard.edu. Will Tobey will be available after each class, and by appointment in his office at L-P24, William_Tobey@hks.harvard.edu. Will Tobey's cellphone is 301-318-8902 and his assistant is Rose Garcia, rosalind_garcia@hks.harvard.edu 617-496-4410. The course assistant is Jackie Parziale, Jackie_Parziale@student.hks.harvard.edu, 781-752-8576.

Assignments and Grading

There are six assignments for this course. The first assignment is a problem set intended to familiarize students with some of the key numbers associated with nuclear weapons production and effects, and how they might influence policy choices. Two of the other assignments are policy memos laying out options and making a recommendation related to a particular policy problem that will be provided in class. Two of the assignments are participation in class simulations, one focused on nuclear negotiations with Iran and the other focused on U.S. interagency decision-making with respect to a nonproliferation contingency. Students will receive somewhat different assignments for the simulations, depending on the roles they are to play. Detailed instructions will be given the week before the simulations. Students should be advised that there will be extra out-of-class work during the week of the Iran simulation, and that a short reflection must be written by the due-dates below. The final assignment is a take-home final exam.

In addition to these written assignments, there will be brief weekly on-line questionnaires on the material covered that week. These will not be graded, but are mandatory. (Learning research reveals that recalling things you have recently learned and putting them into your own words significantly enhances understanding and retention, and it will help us to track how well we are communicating major concepts.)

Written assignments must be submitted electronically by 5:00 p.m. on the dates listed below. Late papers will receive reduced grades, except in exceptional circumstances approved by the instructors.

#1: September 20	Problem set (5% of course grade)
#2: October 1	First recommendation memo (15%)
#3: October 7-11	First simulation exercise (15%)
#4: November 5	Second recommendation memo (group) (15%)
#5: December 3	Second simulation exercise (10%)
#6: December 13	Take-home final exam (25%)

The last 15% of the course grade will be based on participation in class discussion.

Class Schedule

Class	Date:	Subject:
1	5 Sep Both	Why this course matters: Nuclear, biological, and chemical weapons and global security in a risk-based framework
2	10 Sep MB	Nuclear weapons design and construction, nuclear materials, nuclear effects
3	12 Sep WT	Nuclear materials production, safeguards, threats, and diplomacy: North Korea Part I, 1988-2000
4	17 Sep MB	Why states decide to get, or not to get, nuclear weapons
5	19 Sep MB	The Nonproliferation Treaty (NPT) and the nonproliferation regime

6	24 Sep WT	North Korea Parts II, III... 2001-Present
7	26 Sep Both	Nuclear deterrence, nuclear dangers, and nuclear doctrine
8	1 Oct WT	Nuclear delivery systems and defenses
9	3 Oct Both	Nuclear arms control and disarmament
10	8 Oct Both	Simulation
11	10 Oct Both	Simulation
12	15 Oct Both	Simulation readout; future of nuclear weapons policy
13	17 Oct WT	Nuclear dangers in South Asia
14	22 Oct MB	Nuclear energy and nuclear safeguards
15	24 Oct WT	Sanctions for nonproliferation
16	29 Oct MB	Tools beyond treaties
17	31 Oct WT	Iran's nuclear program: through the JCPOA
18	5 Nov MB	Iran's nuclear program: what now?
19	7 Nov WT	Nonproliferation successes: Libya, South Africa, and more
20	12 Nov MB	Stopping black-market nuclear technology transfer
21	14 Nov WT	Preemptive and preventive strikes; and active options short of war
22	19 Nov MB	Preventing nuclear terrorism
23	21 Nov	Chemical and biological weapons (guest)
24	26 Nov	Nonproliferation policy processes (guest)
	28 Nov	THANKSGIVING: No class
25	3 Dec Both	Decision-making simulation: a nonproliferation contingency
26	5 Dec Both	Semester overview; careers in nuclear risk reduction

Optional Additional Classes

We will offer optional additional classes and review sessions on selected Fridays, 2:45-4:00, in Wexner 436. These will be announced on the Monday before or earlier.

Expectations and Readings

The Kennedy School is a professional school, training professionals. As such, students are expected to: attend all classes; be on time; submit assignments on time; and do their best to prepare professional products for their assignments. We expect students to build a culture of cooperation and mutual respect in class, including all races, nationalities, genders, past experiences, and other characteristics. Group work will be an important element; please let us know if groups are not working well. This is a discussion-based class, and class participation is very important. To be able to participate in the discussion, students are expected to have done

the reading *before* each class. (Students need only read the *required* readings; the recommended readings are only for those students who want to explore a particular topic further.) Computers, tablets, and cell phones may not be used in class.

Most of the course readings are available on the internet. Those that are not will be posted on the class web page. While there is no textbook for this course, a good general resource is Joseph F. Pilat and Nathan Busch, *The Routledge Handbook of Nuclear Proliferation and Policy* (Abingdon, Oxon, U.K.: Routledge, 2015). A good (though dated) overview of U.S. nuclear weapons policy and its intersections with nonproliferation is provided in George Bunn and Christopher F. Chyba, eds., *U.S. Nuclear Weapons Policy: Confronting Today's Threats* (Washington, D.C.: Brookings, 2006). Both of these will be on reserve in the HKS library. Students who are particularly interested may consider purchasing them.

Up-to-date information on issues regularly being shaped by new developments is an important element of policy in this area; course readings will be updated accordingly.

Note: the readings in this course present a range of views. We will certainly assign readings that one or both instructors disagree with; indeed, some of the readings disagree with each other. Use your critical reading skills, asking whether the evidence the authors offer seems adequate to support their arguments, and what you think the risks and benefits of the policies the authors advocate might be.

An Important Reminder About Citing Sources: Students *must* be familiar with and observe Kennedy School and Harvard rules regarding the citation of sources. Any sentences or paragraphs taken verbatim from the writing of (or interviews with) any other person or persons, or from your own writing that has been published elsewhere, must be placed in quotation marks and each one must have its source identified with a footnote or endnote that includes the usual bibliographic information: author's name, title of article or chapter, venue (book, journal, magazine, website, report, thesis, term paper, private letter), date, and page numbers if applicable. Changing the wording of a sentence or passage slightly does not evade the requirement for citation (nor reduce the chance of detection). Indeed, whenever you are drawing an important argument or insight from someone else, even if you reword it into your own words, a reference to the source is required. All of these requirements also apply to material taken from websites. Including material from others in assignments, exams, or term papers without appropriate quotation marks and citations is regarded, as a matter of School and University policy, as a serious violation of academic and professional standards and can lead to serious consequences.

Proliferation News Sources

In class, we will frequently be discussing events in the news, and students should keep up with at least the biggest news stories unfolding relating to nonproliferation. (In some cases, a news story to be discussed will be distributed before class.) Particularly useful sources for proliferation-related news include:

Proliferation News. Prepared by the Carnegie Endowment for International Peace's Nuclear Policy program, this source alone will allow students to keep up with the most important nonproliferation news. Students can sign up for the free e-mail service, or go to the website at <http://carnegieendowment.org/publications/pronews/>.

ArmsControlWonk. Founded by Dr. Jeffrey Lewis (former executive director of the HKS Managing the Atom project), this blog provides in-depth commentary and analysis on a variety of nonproliferation developments. <http://www.armscontrolwonk.com>

ReThink Media Nuclear News. You can subscribe to this daily e-mail compilation by e-mailing deepika@rethinkmedia.org

Non-proliferation Education Center Twitter Feed. Aggregates stories related to nuclear nonproliferation, including energy issues. <https://twitter.com/nuclearpolicy> and also emails a weekly summary. (Many of the sources above also have twitter feeds.)

Belfer Center for Science and International Affairs resources:

Managing the Atom <http://www.belfercenter.org/project/managing-atom>

U.S.-Russia Initiative to Prevent Nuclear Terrorism <http://www.belfercenter.org/project/us-russia-initiative-prevent-nuclear-terrorism>

Readings (to be updated as semester proceeds)

5 September: Why this course matters: Nuclear, biological, and chemical weapons risks that must be managed

William J. Perry, "My Personal Journey at the Nuclear Brink," *European Leadership Network*, 17 June 2013, http://www.europeanleadershipnetwork.org/my-personal-journey-at-the-nuclear-brink-by-bill-perry_633.html.

Matthew Bunn, "Nuclear Dangers and Challenges," presentation, September 15, 2017 (on class Canvas page)

Matthew Bunn, "A Risk-Informed Approach to Nonproliferation Policy" (memo, on class Canvas page).

Recommended Readings

Tom Lehrer, "Who's Next?" (satire), 1964, <https://www.youtube.com/watch?v=oRLON3ddZIw> (See if you can spot the countries that were thought then to be pursuing nuclear weapons who are no longer considered major worries.)

Graham Allison, "Nuclear Disorder: Surveying Atomic Threats," *Foreign Affairs*, January/February 2010, pp. 74-85. http://belfercenter.ksg.harvard.edu/publication/19819/nuclear_disorder.html

(Although this is nine years old, it provides a useful overview of concerns about different nuclear threats; since then, concerns over U.S.-Russian nuclear relations, North Korea's nuclear capabilities, and the nuclear arms competition between India and Pakistan have grown.)

Thomas C. Reed and Danny B. Stillman, *The Nuclear Express: A Political History of the Bomb and its Proliferation* (Osceola, WI: Zenith Press, 2009). (A useful overview of proliferation history – with some controversial judgments.)

Ashton B. Carter, "How to Counter WMD," *Foreign Affairs*, September/October 2004, Vol. 83, No. 5, pp. 72-85, <http://ezp-prod1.hul.harvard.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=14348326&site=ehost-live&scope=site> (Although old, this summary of approaches to dealing

with proliferation is of special interest as a comprehensive summary, and for its author's later role as Secretary of Defense.)

10 September: Nuclear weapons design and construction, nuclear materials, nuclear effects

Watch Bunn video on these topics on class web page. (YouTube version close to a million views!)

International Panel on Fissile Materials, "Appendix: Fissile Materials and Nuclear Weapons," in *Global Fissile Materials Report 2015: Nuclear Weapon and Fissile Material Stockpiles and Production* (Princeton, N.J.: IPFM, 2015), pp. 40-47.

<http://fissilematerials.org/library/gfmr15.pdf>

Matthew Bunn and Nickolas Roth, "The Effects of a Single Terrorist Nuclear Bomb," *Bulletin of the Atomic Scientists*, September 28, 2017, <https://thebulletin.org/2017/09/the-effects-of-a-single-terrorist-nuclear-bomb/>.

Alan Robock and Owen Brian Toon, "Local Nuclear War, Global Suffering," *Scientific American*, January 2010, pp. 74-81 (skim).

<http://climate.envsci.rutgers.edu/pdf/RobockToonSciAmJan2010.pdf>

A useful resource: <http://www.nuclearsecrecy.com/nukemap>. With this on-line tool, you can examine the effects of a nuclear weapon of any size detonated at any point in the world you choose, for both air bursts and ground bursts. A 3D version is also available.

Recommended Reading

Erik Barnouw, "Hiroshima/Nagasaki, August 1945," (film, 15 minutes), Columbia University, 1969, <https://archive.org/details/hiroshimanagasakiagust1945#>. (Highly recommended. A powerful 15 minutes of footage of the aftermath of the bombings.)

Office of Technology Assessment, *The Effects of Nuclear War* (Washington, DC: OTA, May 1979), especially pp. 15-46. <http://www.princeton.edu/~ota/disk3/1979/7906/7906.PDF> (Useful overview of all of the effects of nuclear weapons.)

Office of Technology Assessment, "Technical Aspects of Nuclear Proliferation," in *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA, December 1993), especially pp. 119-129, 149-158. <http://www.fas.org/spp/starwars/ota/9344.html> (Helpful brief introduction to key technological aspects of nuclear proliferation.)

Donald R. Cotter, "Peacetime Operations: Safety and Security," in Ashton B. Carter, John D. Steinbruner, and Charles A. Zraket, eds., *Managing Nuclear Operations* (Washington, D.C.: Brookings, 1987), section on pp. 42-53. (Useful discussion of Permissive Action Links and other features to prevent accidental detonations or unauthorized use of nuclear weapons.)

Samuel Glasstone and Phillip J. Dolan, *The Effects of Nuclear Weapons*, 3rd Ed. (Washington, D.C.: U.S. Department of Defense and Energy Research and Development Administration, 1977), <http://fissilematerials.org/library/gla77.pdf> (The definitive U.S. government textbook.)

Alexander Glaser, "Nuclear Weapons Effects" [lecture slides], http://www.princeton.edu/~aglaser/lecture2007_weaponeffects.pdf (Very nice summary slides.)

Frederic Solomon, M.D., and Robert Q. Marston, M.D., *The Medical Implications of Nuclear War* (Washington, D.C.: National Academy Press, 1986), esp. Theodore Postol, Chapter 1,

“Possible Fatalities from Superfires Following Nuclear Attacks in or near Urban Areas,” http://www.nap.edu/openbook.php?record_id=940&page=15 (Detailed account of mass fires and their dangers; the whole study provides a useful overview of the awesome challenge of medical response to nuclear attacks.)

Lynn Eden, *Whole World on Fire: Organizations, Knowledge, and Nuclear Weapons Devastation* (Ithaca, N.Y.: Cornell, 2006). (Fascinating discussion of the organizational reasons why U.S. analyses of strategic requirements largely ignored mass fires, one of the most devastating effects of nuclear weapons.)

12 September: Nuclear material production, safeguards, threats, and diplomacy: North Korea, 1992-1994

(Although this case occurred long ago, we start with it as it (a) sets the stage for what is happening with North Korea today; (b) involves both the plutonium and uranium paths to the bomb, which are important to understand from the beginning; and (c) involves many of the key tools of nonproliferation policy, from diplomacy to possible military strikes.)

Watch Bunn video on how plutonium and highly enriched uranium are made, on class web page.

“Standing at the Brink in North Korea: The Counterproliferation Imperative,” in Ashton B. Carter and William J. Perry, *Preventive Defense: A New Security Strategy for America* (Washington, D.C.: Brookings Institution Press, 1999), pp. 123-142.

“Carrots, Sticks, and Question Marks: Negotiating the North Korean Crisis (A)” Harvard Kennedy School Case C18-95-1297.0, 39 pp.

“Carrots, Sticks, and Question Marks: Negotiating the North Korean Crisis (B)” Harvard Kennedy School Case C18-95-1298.0, 17 pp.

Houston G. Wood, Alexander Glaser, and R. Scott Kemp, “The Gas Centrifuge and Nuclear Weapons Proliferation,” *Physics Today*, pp. 40-45 http://ptonline.aip.org/journals/doc/PHTOAD-ft/vol_61/iss_9/40_1.shtml

Recommended Reading

Office of Technology Assessment, “Technical Aspects of Nuclear Proliferation,” in *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA, December 1993), pp. 129-149. <http://www.fas.org/spp/starwars/ota/9344.html>

Peter Zimmerman, “Proliferation: Bronze Medal Technology is Enough,” *Orbis*, Vol. 38, No. 1 (Winter 1994), pp. 67-83. <http://ezp-prod1.hul.harvard.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mth&AN=9409027514&site=ehost-live&scope=site>

R. Scott Kemp, “The Nonproliferation Emperor Has No Clothes: The Gas Centrifuge, Supply-Side Controls, and the Future of Nuclear Proliferation,” *International Security*, Vol. 38, No. 4., pp. 39-78. <http://dspace.mit.edu/handle/1721.1/89182>

Daniel B. Poneman, Joel S. Wit, and Robert L. Gallucci, *Going Critical: The First North Korean Nuclear Crisis* (Washington, D.C.: Brookings, 2004).

Leon V. Sigal, *Disarming Strangers: Nuclear Diplomacy With North Korea* (Princeton: Princeton University Press, 1998), esp. pp. 90-123, 150-161, 184-191.

William J. Perry, *Review of United States Policy Toward North Korea: Findings and Recommendations* (Washington, D.C.: U.S. Department of State, 12 October 1999), http://belfercenter.hks.harvard.edu/publication/2017/review_of_united_states_policy_toward_north_korea.html

Victor D. Cha and David C. Kang, *Nuclear North Korea: A Debate on Engagement Strategies* (New York: Columbia, 2005) 280 pp.

17 September: Why states decide to get, or not to get, nuclear weapons

Scott Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security*, Vol. 21, No. 3, Winter 1996/1997, pp. 54-86. https://fsi.stanford.edu/sites/default/files/Why_Do_States_Build_Nuclear_Weapons.pdf

Matthew Bunn, "Realist, Idealist, and Integrative Approaches to Proliferation Policy" (unpublished, 2003), available on class Canvas page.

Recommended Reading

Scott Sagan, "The Causes of Nuclear Weapons Proliferation," *Annual Review of Political Science* 2011, Vol. 14, pp. 225-44. http://iis-db.stanford.edu/pubs/23205/Sagan_Causesof_NuclearWeaponsProliferation.pdf (An excellent survey of how the literature evolved after his seminal 1996/1997 paper.)

Mark Bell, "Examining Explanations for Nuclear Proliferation," *International Studies Quarterly*, (2015), 0, pp. 1-10, <http://isq.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/isq/early/2015/12/14/isq.sqv007.full.pdf> (A detailed case that the statistical analyses of proliferation offer less insight than may at first appear. See also the important discussion of this article here: <http://www.isanet.org/Publications/ISQ/Posts/ID/5003/What-Drives-Nuclear-Proliferation>)

Jacques E. C. Hymans, "The Study of Nuclear Proliferation and Nonproliferation: Toward a New Consensus?" in William C. Potter and Gaukhar Mukhatzhanova, eds., *Forecasting Nuclear Proliferation in the 21st Century: The Role of Theory: Vol. 1* (Stanford: Stanford University Press, 2010), pp. 13-37. (Both volumes of this book are quite useful, providing a strong overview of the literature on why states get or do not get nuclear weapons and on particular cases.)

Philipp Bleek, *When Did (and Didn't) States Proliferate? Chronicling the Spread of Nuclear Weapons* (Cambridge, Mass: Project on Managing the Atom, Belfer Center for Science and International Affairs, Belfer Center for Science and International Affairs, Harvard Kennedy School, and the James Martin Center for Nonproliferation Studies, Middlebury Institute of International Studies, Monterey, Calif., June 2017), <https://www.belfercenter.org/publication/when-did-and-didnt-states-proliferate> (The best available dataset on which countries explored, pursued, or acquired nuclear weapons, and when.)

Jim Walsh, *Bombs Unbuilt: Power, Ideas, and Institutions in International Politics*, unpublished Ph.D. dissertation, Massachusetts Institute of Technology, 2001. (Unfortunately, never turned into a book – a remarkable analysis of why states do not build nuclear weapons, breaking countries' programs down into many smaller decisions that are either in the direction toward or away from nuclear weapons.)

Mitchell Reiss, *Bridled Ambition: Why States Constrain Their Nuclear Capabilities* (Washington D.C.: Woodrow Wilson Center Press, 1995), esp. Chapter 7, “Conclusion,” pp. 321-333. (Another very useful analysis of what states choose not to build nuclear weapons.)

William C. Potter and Gaukhar Mukhatzhanova, “Divining Nuclear Intentions: A Review Essay,” *International Security*, Vol. 33, No. 1, Summer 2008, pp. 139-169. (A useful summary of the literature, based in part on the papers from the *Forecasting Nuclear Proliferation in the 21st Century* volumes.)

Ariel E. Levite, “Never Say Never Again: Nuclear Reversal Revisited,” *International Security*, Vol. 27, No. 3, Winter 2002/2003, pp. 59-88. (A classic. Just because a country stopped its nuclear weapons effort for the time being doesn’t mean that will last forever.)

19 September: The Nonproliferation Treaty (NPT) and the global nonproliferation regime

“Treaty on the Non-Proliferation of Nuclear Weapons”

<http://www.un.org/events/npt2005/npttreaty.html>

George Bunn, “The Nuclear Nonproliferation Regime and Its History,” Chapter 3 in George Bunn and Christopher Chyba, eds., *U.S. Nuclear Weapons Policy: Confronting Today’s Threats* (Washington, D.C.: Brookings, 2006), pp. 75-88, 94-103. (Perhaps the best available overview of the regime, by one of the NPT’s negotiators – and one of the instructors’ father.)

Graham T. Allison, “Flight of Fancy,” in *Annals of the American Academy of Political and Social Science*, Vol. 607 (September 2006), pp. 162-166, <http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/25097846> (Though old, this provides a useful crystallization of the view that the NPT regime is fragile and might collapse.)

Matthew Bunn, “The Success and Resilience of the NPT.” (Memo, to be provided; an argument that the NPT regime has been successful and shows strong signs of resilience.)

Matthew Bunn, “The Impact of States Outside the NPT Regime.” (Memo, to be provided.)

Recommended Reading

Jim Walsh, “Learning From Past Success: The NPT and the Future of Non-Proliferation,” No. 41 (Stockholm: Weapons of Mass Destruction Commission, October 2005), <http://www.blixassociates.com/wp-content/uploads/2011/03/no41.pdf> (An excellent overview of evidence for the NPT’s success, and a very interesting theory of the reasons for that success.)

Steven E. Miller, “Nuclear Collisions: Discord, Reform & the Nuclear Nonproliferation Regime,” *American Academy of Arts & Sciences*, 2012, <http://www.amacad.org/pdfs/nonproliferation.pdf> (Now several years old, this is still an excellent summary of the debates between nuclear weapon states and non-nuclear-weapon states over the NPT and its future.)

Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: An Enduring Debate* (New York: Norton, 2012). (3rd edition of a classic: exploring the arguments as to whether nuclear proliferation makes the world more dangerous – the dominant view – or safer.)

Lewis A. Dunn, “The NPT: Assessing the Past, Building the Future,” *Nonproliferation Review*, Vol. 16, No. 2 (July 2009), pp. 143-172, <https://www.nonproliferation.org/wp-content/uploads>

[/npr/npr_16-2_dunn.pdf](#). (Useful assessment of the impact of each of the key articles of the NPT.)

Matthew Bunn, “The Origin and Importance of the Nuclear Nonproliferation Treaty,” (remarks at event celebrating the 50th anniversary of the NPT, U.S. State Department, June 28, 2018), available on the class Canvas page.

Michael Krepon, “Proliferation Optimism vs. Pessimism Revisited,” *Arms Control Wonk*, March 30, 2018, <https://www.armscontrolwonk.com/archive/1204999/proliferation-optimism-vs-pessimism-revisited/>

Avner Cohen and William Burr, “The Untold Story of Israel’s Bomb,” *Washington Post*, 30 April 2006, http://www.washingtonpost.com/wp-dyn/content/article/2006/04/28/AR2006042801326_pf.html

Subrata Ghoshroy, “Taking Stock: The U.S.-India Nuclear Deal 10 Years Later,” *Bulletin of the Atomic Scientists*, 16 February 2016, <http://thebulletin.org/taking-stock-us-india-nuclear-deal-10-years-later9165>

Beatrice Fihn, “Nobel Peace Prize Acceptance Speech,” December 10, 2017, <https://www.wagingpeace.org/beatrice-fihn-nobel-peace-prize-acceptance-speech/> (Statement in favor of the treaty prohibiting all nuclear weapons, from a key leader of the movement that brought it into being.)

Scott Sagan and Benjamin A. Valentino, “The Nuclear Weapons Ban Treaty: Opportunities Lost,” *Bulletin of the Atomic Scientists*, July 16, 2017, <https://thebulletin.org/2017/07/the-nuclear-weapons-ban-treaty-opportunities-lost/> (A thoughtful critique of the ban treaty.)

Jeffrey W. Knopf, ed., *Security Assurances and Nuclear Nonproliferation* (Stanford, Calif.: Stanford University Press, 2012).

“Nuclear-Weapon-Free Zones,” *Disarmament Forum* (United Nations Institute for Disarmament Research), 2011, No. 2, <http://www.unidir.org/files/publications/pdfs/nuclear-weapon-free-zones-en-314.pdf>

Thomas Graham, “The Nuclear Non-Proliferation Treaty and the Comprehensive Test Ban Treaty, the Relationship,” in Pierce S. Corden, David Hafemeister, and Peter Zimmerman, *Nuclear Weapon Issues in the 21st Century*, conference proceedings (Washington, D.C.: American Institute of Physics, 2014), <https://aip.scitation.org/doi/pdf/10.1063/1.4876457>

Oliver Meier, *The 2015 NPT Review Conference Failure: Implications for the Nuclear Order* (Berlin: German Institute for International and Security Affairs, October 2015), https://www.swp-berlin.org/fileadmin/contents/products/arbeitspapiere/mro_wp_NVV_October2015.pdf

Andrey Baklitsky, “The 2015 NPT Review Conference and the Future of the Nonproliferation Regime,” *Arms Control Today*, July/August 2015, http://www.armscontrol.org/ACT/2015_0708/Features/The-2015-NPT-Review-Conference-and-the-Future-of-The-Nonproliferation-Regime

“Agree to Disagree: Banning WMD in the Middle East,” *Bulletin of the Atomic Scientists*, June-August 2013 <http://thebulletin.org/banning-wmd-middle-east> (A variety of perspectives on the proposal for a Weapons of Mass Destruction Free Zone in the Middle East, which has been a

central element of NPT politics for over 20 years.)

Martin B. Malin and Steven E. Miller, “A WMD Free Zone in the Middle East: From the Outside Looking In”; Sameh Aboul-Enein, “Making Progress on the Middle East Nuclear- and WMD-Free Zone: Egypt’s NPT Pillar”; “Where do We Go From Here? A New Israeli Approach to Tension-Reduction in the Middle East”; and Paolo Foradori, “Conclusion: Keep the Ball Rolling” in Paolo Foradori and Martin B. Malin, eds., *A WMD Free Zone in the Middle East: Regional Perspectives* (Cambridge, Mass.: Project on Managing the Atom, Harvard University, November 2013), http://belfercenter.ksg.harvard.edu/files/dp_2013-09.pdf

George Bunn, “The NPT: Banning Transfers of Nuclear Weapons Takes Two Decades,” and “The NPT Finally Brings Widespread International Safeguards on Reactors,” in *Arms Control by Committee: Managing Negotiations with the Russians* (Stanford: Stanford University Press, 1992). (Explaining the history of key provisions of the NPT.)

Roland Popp, Liviu Horowitz, and Andreas Wenger, eds., *Negotiating the Nuclear Nonproliferation Treaty: Origins of the Nuclear Order* (Abingdon, Oxon, U.K.: Routledge, 2016).

William C. Potter and Sarah Bidgood, *Once and Future Partners: The United States, Russia, and Nuclear Non-Proliferation* (London: International Institute for Strategic Studies, 2018), especially Lewis A. Dunn, “Negotiating and Sustaining the Non-Proliferation Treaty: Challenges and Lessons for U.S.-Russia Cooperation,” pp. 117-134. (Another version of the history of the NPT negotiation.)

24 September: North Korea Parts II, III... 2001-Present

William H. Tobey, “Lessons from Negotiations with North Korea, 2002-2018” (memo, to be provided)

David Albright, “Understanding North Korea’s Nuclear Weapon Capabilities,” presentation (Washington, D.C.: Institute for Science and International Security, May 9, 2018), http://isis-online.org/uploads/isis-reports/documents/Albright_North_Korea_slides_for_CTR_talk_may_9%2C_2018_final_pdf.pdf.

Victor Cha, *The Impossible State: North Korea, Past and Future* (New York: Harper-Collins, 2012), pp. 255-274.

Six Party Talks Joint Statement, 19 September 2005, http://www.chinadaily.com.cn/english/doc/2005-09/19/content_479150.htm

Jeffrey Lewis, “Rockets and the Leap Day Deal,” *armscontrolwonk.com*, 23 March 2012, <http://lewis.armscontrolwonk.com/archive/5098/rockets-and-the-leap-day-deal>

Singapore summit statement, June 12, 2018: <https://www.whitehouse.gov/briefings-statements/joint-statement-president-donald-j-trump-united-states-america-chairman-kim-jong-un-democratic-peoples-republic-korea-singapore-summit/>

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(Also recommended: the exchange of letters over this article in the March/April 2010 issue, <http://www.heinonline.org.ezp-prod1.hul.harvard.edu/HOL/Page?handle=hein.journals/fora89&id=1&size=2&collection=journals&index=journals/fora>)

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8 October: Simulation

10 October: Simulation

During this week, students will participate in a negotiation simulation involving a scenario in which there is a new U.S. President and new arms control talks involving the United States, Russia, and China.

15 October: Simulation readout; future of nuclear weapons policy

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Thomas Countryman, “An Assessment of the New Nuclear Posture Review,” speech, February 20, 2018, <https://www.armscontrol.org/events/2018-02/assessment-new-nuclear-posture-review> (A critique of the Trump document from the current chairman of the Arms Control Association and former Assistant Secretary of State for Nonproliferation.)

Frank Miller, “Addressing Fears About the Nuclear Posture Review and Limited Nuclear Use,” *War on the Rocks*, February 28, 2018, <https://warontherocks.com/2018/02/addressing-fears-nuclear-posture-review-limited-nuclear-use/>. (A defense of the new initiatives in the Trump nuclear posture review from a former Defense Department nuclear official who advised the review.)

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http://www.nti.org/media/pdfs/NTI_Paper_Roadmap_for_Nuclear_Policy_and_Posture_FINAL.pdf?_id=1532986315 (Proposals on a broad range of key aspects of U.S. nuclear policy.)

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Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Palo Alto, Calif.: Stanford University Press, 2015). (A thoughtful version of the argument that the United States needs a robust nuclear force.)

Robert Joseph, “Trump Nuclear Posture Outlines Reasoned Steps to Ensure Deterrence After Years of Neglect,” *The Hill*, February 6, 2018, <http://thehill.com/opinion/national-security/372301-trump-nuclear-posture-sets-forth-reasoned-steps-to-ensure> (Another supportive take on the Trump nuclear posture review.)

Pierce Corden, Tony Fainberg, David Hafemeister, and Allison Macfarlane, eds., *Nuclear Weapons and Related Security Issues* (Washington, D.C.: American Institute of Physics, 2017), especially Steve Pifer, “The Future of U.S.-Russia Nuclear Arms Control.”

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17 October: Nuclear Dangers in South Asia

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22 October: Nuclear safeguards and nuclear energy

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Bruce W. Jentleson and Christopher A. Whytock, "Who 'Won' Libya? The Force-Diplomacy Debate and Its Implications for Theory and Policy," *International Security*, Vol. 30, No. 3 (Winter 2005/2006), pp. 47-86 http://belfercenter.ksg.harvard.edu/files/is3003_pp047-086.pdf

(Note the "or" above: only ONE of these readings is required.)

Ukraine:

"The Decision to Denuclearize: How Ukraine Became a Non-Nuclear-Weapons State," Harvard Kennedy School Case C14-98-1425.0, 28 pp.

Or

William C. Potter, *The Politics of Nuclear Renunciation: The Cases of Belarus, Kazakhstan, and Ukraine* (Washington DC: Henry L. Stimson Center, Occasional Paper No. 22, April 1995), <https://www.stimson.org/sites/default/files/file-attachments/Occasional%20Paper%20No.%2022%20April%201995.pdf> Ukraine, pp. 8-9, 19-26, 42-49, and Conclusion, 50-52)

(Again, note the “or” above: only ONE of these readings is required, not both.)

South Africa:

Peter Liberman, “The Rise and Fall of the South African Bomb,” *International Security*, Fall 2001, 45-86;

Or

“Nuclear Rollback,” pp. 183-193, in David Albright with Andrea Stricker, *Revisiting South Africa’s Nuclear Weapons Program: Its History, Dismantlement, and Lessons for Today* (Washington, D.C.: Institute for Science and International Security, 2016), <http://isis-online.org/uploads/isis-reports/documents/RevisitingSouthAfricasNuclearWeaponsProgram.pdf>

Recommended Reading

Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings, 2004), especially the introductory and concluding chapters.

William C. Potter and Gaukhar Mukhatzhanova, eds., *Forecasting Nuclear Proliferation in the 21st Century: A Comparative Perspective: Vol. 2* (Stanford: Stanford University Press, 2010). (This book includes detailed chapters on almost all of the key cases of nonproliferation success.)

Harald Müller and Andreas Schmidt, “The Little-Known Story of Deproliferation: Why States Give up Nuclear Weapons Activities,” in William C. Potter and Gaukhar Mukhatzhanova, eds., *Forecasting Nuclear Proliferation in the 21st Century: The Role of Theory: Vol. 1* (Stanford: Stanford University Press, 2010).

Japan:

Jacques E.C. Hymans, “Veto Players, Nuclear Energy, and Nonproliferation: Domestic Institutional Barriers to a Japanese Bomb,” *International Security*, Vol. 36, No. 2 (Fall 2011), pp. 154-189, http://belfercenter.ksg.harvard.edu/files/veto_players.pdf

Selig Harrison, “Japan and Nuclear Weapons,” Chapter 1 in Selig Harrison, ed., *Japan’s Nuclear Future: The Plutonium Debate and East Asian Security* (Washington, D.C.: Carnegie Endowment for International Peace, 1996), pp. 3-44.

Akira Kurosaki, “Nuclear Energy and Nuclear-Weapon Potential: A Historical Analysis of Japan in the 1960s,” *Nonproliferation Review*, Vol. 24, No. 1-2, pp. 47-65, <https://www.tandfonline.com/doi/abs/10.1080/10736700.2017.1367536>

Hajimi Izumi and Katsuhisa Furukawa, “Not Going Nuclear: Japan’s Response to North Korea’s Nuclear Test,” *Arms Control Today*, June 2007
http://www.armscontrol.org/act/2007_06/CoverStory

Argentina-Brazil:

“Argentina” and “Brazil,” pp. 382-406 in Joseph Cirincione, Jon B. Wolfsthal, and Miriam Rajkumar, *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*, 2nd Ed. (Washington, D.C.: Carnegie Endowment for International Peace, 2005).

Togzhan Kassenova, *Brazil’s Nuclear Kaleidoscope: An Evolving Identity* (Washington, D.C.: Carnegie Endowment for International Peace, 2014),
http://carnegieendowment.org/files/brazil_nuclear_kaleidoscope_lo_res.pdf

Egypt:

Robert J. Einhorn, "Egypt: Frustrated, But Still on a Non-Nuclear Course," pp. 43-82 in Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings, 2004)

Jim Walsh, "Will Egypt Seek Nuclear Weapons? An Assessment of Motivations, Constraints, Consequences, and Policy Options," pp. 13-41 in William C. Potter and Gaukhar Mukhatzhanova, eds., *Forecasting Nuclear Proliferation in the 21st Century: A Comparative Perspective: Vol. 2* (Stanford: Stanford University Press, 2010).

South Korea:

Scott Snyder, "South Korean Nuclear Decision-Making," pp. 158-181 in William C. Potter and Gaukhar Mukhatzhanova, eds., *Forecasting Nuclear Proliferation in the 21st Century: A Comparative Perspective: Vol. 2* (Stanford: Stanford University Press, 2010).

Jonathan D. Pollack and Mitchell B. Reiss, "South Korea: The Tyranny of Geography and the Vexations of History," pp. 254-292 in Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings, 2004).

Taiwan:

Derek J. Mitchell, "Taiwan's Hsin-Chu Program: Deterrence, Abandonment, and Honor," pp. 293-313 in Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings, 2004)

Monte Bullard and Jing-dong Yuan, "Taiwan and Nuclear Weaponization: Incentives and Disincentives," pp. 182-202 in William C. Potter and Gaukhar Mukhatzhanova, eds., *Forecasting Nuclear Proliferation in the 21st Century: A Comparative Perspective: Vol. 2* (Stanford: Stanford University Press, 2010).

Australia:

Jim Walsh, "Surprise Down Under: The Secret History of Australia's Nuclear Ambitions," *Nonproliferation Review*, Fall 1997, pp. 1-20 <http://cns.miis.edu/npr/pdfs/walsh51.pdf>

Further on South Africa:

Uri Friedman, "Why One President Gave Up His Country's Nukes," (interview with F.W. de Klerk), *The Atlantic*, September 9, 2017, <https://www.theatlantic.com/international/archive/2017/09/north-korea-south-africa/539265/>

David Albright with Andrea Stricker, *Revisiting South Africa's Nuclear Weapons Program: Its History, Dismantlement, and Lessons for Today* (Washington, D.C.: Institute for Science and

International Security, 2016), <http://isis-online.org/uploads/isis-reports/documents/RevisitingSouthAfricasNuclearWeaponsProgram.pdf>

Nic von Wielligh and Lydia von Wielligh-Steyn, *The Bomb: South Africa's Nuclear Weapons Programme* (Pretoria: Litera, 2015).

Jean du Preez and Thomas Maettig, "From Pariah to Poster Boy: How Plausible is a Reversal?" pp. 302-334 in William C. Potter and Gaukhar Mukhatzhanova, eds., *Forecasting Nuclear Proliferation in the 21st Century: A Comparative Perspective: Vol. 2* (Stanford: Stanford University Press, 2010).

14 November: Preemptive and Preventive Attacks and Active Options Short of War

David Sanger, "Obama Order Sped Up Wave of Cyberattacks Against Iran," *New York Times*, p. A1, 1 June 2012, http://www.nytimes.com/2012/06/01/world/middleeast/obama-ordered-wave-of-cyberattacks-against-iran.html?pagewanted=all&_r=0

William Tobey, "Nuclear Scientists as Assassination Targets," *Bulletin of Atomic Scientists*, Vol. 68, No. 1 (January/February 2012), pp. 61-69.

Martin B. Malin, "The Effectiveness and Legitimacy of the Use of Force to Prevent Nuclear Proliferation," in Christopher Daase and Oliver Meier, eds., *Arms Control in the 21st Century*, (New York: Routledge, 2012), pp. 81-122.

Richard Follath and Holger Stark, "The Story of 'Operation Orchard': How Israel Destroyed Syria's Al Kibar Nuclear Reactor," *Der Spiegel*, 2 November 2009
<http://www.spiegel.de/international/world/0,1518,658663,00.html>

Recommended Reading

Dan Reiter, "Preventive Attacks Against Nuclear, Biological, and Chemical Weapons Programs: The Track Record," in William Keller and Gordon Mitchell, eds., *Hitting First* (Pittsburgh, Penn.: University of Pittsburgh Press, 2006), pp. 27-44.

Malfrid Braut-Hegghammer, "Revisiting Osirak: Preventive Attacks and Nuclear Proliferation Risks," *International Security*, Vol. 36, No.1 (Summer 2011), pp.101-132.
http://www.mitpressjournals.org/doi/abs/10.1162/ISEC_a_00046

James J. Wirtz and James A. Russell, "U.S. Policy on Preventive War and Preemption," *The Nonproliferation Review*, Spring 2003, pp. 113-123. <https://www.nonproliferation.org/wp-content/uploads/npr/101wirtz.pdf>

"Preemption," pp. 74-81 in George Perkovich, Jessica T. Matthews, Joseph Cirincione, Rose Gottemoeller, Jon B. Wolfsthal, *Universal Compliance: A Strategy for Nuclear Security* (Washington, D.C.: Carnegie Endowment for International Peace, March 2005),
<http://www.angelfire.com/jazz/sugimoto/nuclear.pdf>

Ivo Daalder and James Steinberg, "The Future of Preemption," *The American Interest*, Vol. 1, No. 2 (Winter 2005), <https://www.the-american-interest.com/2005/12/01/the-future-of-preemption/>

Harald Müller, "WMD Crisis: Law Instead of Lawless Self-Help," No. 37 (Stockholm: Weapons of Mass Destruction Commission, 2005), 16 pp.

<https://web.archive.org/web/20160610161859/http://www.blixassociates.com/wp-content/uploads/2011/03/No37.pdf>

John C. Yoo and Robert J. Delahunty. "The 'Bush Doctrine': Can Preventive War Be Justified?" *Harvard Journal of Law & Public Policy*, Vol. 32 (2009), pp. 843-865.

<http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1774&context=facpubs>

Anthony Clark Arend, "International Law and the Preemptive Use of Military Force," *The Washington Quarterly*, Vol. 26, No. 2 (Spring 2003), pp. 89-103.

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Robert S. Litwak, "Nonproliferation and the Use of Force," in Janne E. Nolan, Bernard I. Finel, and Brian D. Finlay, eds., *Ultimate Security: Combating Weapons of Mass Destruction* (New York: Century Foundation Press, 2003) pp. 75-106.

Richard Betts, "The Osirak Fallacy," *The National Interest*, Vol. 83 (Spring 2006), pp. 22-25

<https://nationalinterest.org/article/the-osirak-fallacy-1093>

Jeremy Tamsett, "The Israeli Bombing of Osiraq Reconsidered: Successful Counterproliferation?" *Nonproliferation Review* vol. 11 (Fall-Winter 2004), pp. 70-85.

<http://dx.doi.org.ezp-prod1.hul.harvard.edu/10.1080/10736700408436979>

19 November: Preventing nuclear terrorism

Matthew Bunn, Martin Malin, Nicholas Roth, and William Tobey, *Preventing Nuclear Terrorism: Continuous Improvement or Dangerous Decline?* (Cambridge, Mass.: Project on Managing the Atom, Harvard Kennedy School, March 2016), Executive Summary, pp. i-ix; 96-132. <http://belfercenter.ksg.harvard.edu/files/PreventingNuclearTerrorism-Web.pdf>

William H. Tobey and Pavel Zolotarev, "The Nuclear Terrorism Threat," presentation for the 2014 Nuclear Security Summit Sherpas, Pattaya, Thailand. January 13, 2014,

<http://belfercenter.ksg.harvard.edu/files/nuclearterrorismthreatthailand2014.pdf>

John Mueller, "The Atomic Terrorist: Assessing the Likelihood," January 2008

<https://politicalscience.osu.edu/faculty/jmueller/APSACHGO.pdf>

Recommended Reading

Matthew Bunn, Nickolas Roth, and William H. Tobey, *Revitalizing Nuclear Security in an Era of Uncertainty* (Cambridge, Mass.: Project on Managing the Atom, Belfer Center for Science and International Affairs, Harvard Kennedy School, January 2019), https://www.belfercenter.org/sites/default/files/2019-03/RevitalizingNuclearSecurity_Mar19.pdf

Matthew Bunn, Yuri Morozov, Rolf Mowatt-Larssen, Simon Saradzhyan, William Tobey, Victor Yesin, Pavel Zolotarev, *The U.S.-Russia Joint Threat Assessment on Nuclear Terrorism*,

(Cambridge, Mass.: May 2011). <http://belfercenter.ksg.harvard.edu/files/Joint-Threat-Assessment%20ENG%2027%20May%202011.pdf>

Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York, N.Y.: Henry Holt & Company, 2004).

Lyudmila Zaitseva and Friedrich Steinhausler, *Nuclear Trafficking Issues in the Black Sea Region*, Non-Proliferation Papers No. 39 (Paris: EU Non-Proliferation Consortium, 2014), <http://www.sipri.org/research/disarmament/eu-consortium/publications/non-proliferation-paper-39>.

Michael Levi, *On Nuclear Terrorism* (Cambridge, MA: Harvard University Press, 2007).

Matthew Bunn and Scott D. Sagan, *Insider Threats* (Ithaca, N.Y.: Cornell, 2017).

Ashton Carter, Michael May and William Perry, *The Day After: Action in the 24 Hours Following a Nuclear Blast in an American City* (Cambridge, Mass., and Palo Alto, Calif.: Preventive Defense Project, Harvard and Stanford Universities, May 2007) http://belfercenter.ksg.harvard.edu/files/dayafterworkshopreport_may2007.pdf

Thomas B. Cochran and Matthew G. McKinzie, "Detecting Nuclear Smuggling," *Scientific American*, April 2008, <https://www.nature.com/scientificamerican/journal/v298/n4/pdf/scientificamerican0408-98.pdf>

Graham Allison, ed., "Confronting the Spector of Nuclear Terrorism," special issue of *The Annals of the American Academy of Political and Social Science*, Vol. 607, September 2006.

Charles D. Ferguson and William C. Potter with Amy Sands, Leonard S. Spector, and Fred L. Wehling, *The Four Faces of Nuclear Terrorism* (New York, N.Y.: Routledge, 2005).

Michael Bronner, "100 Grams (and Counting): Notes from the Nuclear Underworld" (Cambridge, Mass.: Project on Managing the Atom, Harvard University, June 2008) <https://www.belfercenter.org/sites/default/files/files/publication/100-Grams-Final-Color.pdf>

21 November: Nonproliferation policy processes

Review the HKS case study and the Perry-Carter reading from the North Korea 1994 case we covered in class. They provide a good discussion of how some of those decisions were made in the mid-1990s, and the importance of particular personalities in determining outcomes (such as the focus by Ash Carter and John Deutch on constraining North Korean *capabilities*, rather than focusing only on *compliance*).

Gabriel Marcella, "National Security and the Interagency Process," in J. Boone Bartholomees, Jr., *U.S. Army War College Guide to National Security Policy and Strategy* (Carlisle, Penn.: U.S. Army War College, July 2004), pp. 239-260 <https://ssi.armywarcollege.edu/pdffiles/PUB708.pdf>.

Bob Graham and Jim Talent, "Government Organization and Culture" in *World At Risk*, Vintage Books, 2008, pp. 82-106, <http://www.dtic.mil/dtic/tr/fulltext/u2/a510559.pdf> (skim)

Will Tobey's memo on responsibilities of a U.S. National Security Staff officer.

Opposing (sort of) viewpoints on Bolton's culpability:

Joyner, James. "No, John Bolton Didn't Break the National Security Council," *Outside the Beltway*, September 11, 2019. <https://www.outsidethebeltway.com/no-john-bolton-didnt-break-the-national-security-council/>

Hurlburt, Heather. "Bolton Leaves the National Security Council in Ruins," *Foreign Policy*, September 13, 2019. <https://foreignpolicy.com/2019/09/13/bolton-walks-away-from-the-national-security-councils-corpse-trump/>

His successor's plans:

O'Brien, Robert C. "Here's how I will streamline Trump's National Security Council," *The Washington Post*, October 16, 2019. https://www.washingtonpost.com/opinions/robert-c-obrien-heres-how-i-will-streamline-trumps-national-security-council/2019/10/16/2b306360-f028-11e9-89eb-ec56cd414732_story.html

A useful review of the history of the NSC staff:

Hendrix, Jerry. "Reducing NSC staff places Trump on right side of history," *The Hill*, October 11, 2019. <https://thehill.com/opinion/national-security/465320-reducing-nsc-staff-places-trump-on-right-side-of>

How the Ukraine case illustrates the need for good process:

Brands, Hal. "Trump's Dangerous War on the National Security Council," *Bloomberg*, October 8, 2019. <https://www.bloomberg.com/opinion/articles/2019-10-08/ukraine-scandal-no-2-trump-s-war-on-the-nsc>

Recommended:

Karl F. Inderfurth and Loch K. Johnson, eds., *Fateful Decisions: Inside the National Security Council* (Oxford: Oxford University Press, 2004).

David Rothkopf, *Running the World: The Inside Story of the National Security Council* (Cambridge, Mass.: PublicAffairs, 2005).

Gabriel Marcela, ed., *Affairs of State: The Interagency and National Security* (Carlisle, Penn.: U.S. Army War College Strategic Studies Institute, December 2008).
https://www.globalsecurity.org/military/library/report/2009/ssi_marcella.pdf

Joel S. Wit, Daniel B. Poneman, and Robert L. Gallucci, "An Extremely Peculiar Nation," in *Going Critical: The First North Korean Nuclear Crisis* (Brookings Institution Press, August 2005).

Morton Halperin, "The Decision to Deploy the ABM: Bureaucratic and Domestic Politics in the Johnson Administration," *World Politics*, Vol. 25, No. 1, October 1972, pp. 62-95.
<http://www.jstor.org/stable/2010431> (Though old, this article provides a brilliant, though

depressing, insider's view on how national security decision-making actually works – with key players trading off seemingly unrelated issues in their bargaining with each other. For a broader look, see Morton H. Halperin, Priscilla A. Clapp, and Arnold Kanter, *Bureaucratic Politics and Foreign Policy*, 2nd ed. (Washington, D.C.: Brookings, 2006).)

Frank von Hippel, “Big Government and Little Analysts,” *Physics Today*, June 1995, <http://ezp-prod1.hul.harvard.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9506161731&site=ehost-live&scope=site> (Explores how busy government officials, running from meeting to meeting, have little time to draw back and analyze the big picture.)

“Combatting Proliferation of Weapons of Mass Destruction,” Report of the Commission to Assess the Organization of the Federal Government to Combat the Proliferation of Weapons of Mass Destruction, 14 July 1999, Ch 2 & 3, <http://web.mit.edu/chemistry/deutch/policy/1998-ComWMDReport.pdf>

26 November: Chemical and biological weapons and their control (guest lecture)

“Understanding Biological Threats: Overview” (Washington, D.C.: Nuclear Threat Initiative, no date), <http://www.nti.org/threats/biological/>

“Understanding Chemical Threats: Overview” (Washington, D.C.: Nuclear Threat Initiative, no date), <http://www.nti.org/threats/chemical/>

“Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction”
<http://www.opbw.org/convention/documents/btwcetxt.pdf>

Arms Control Association, “The Chemical Weapons Convention at a Glance” (Washington, D.C.: ACA, June 2018) <http://www.armscontrol.org/factsheets/cwcglance>

John Hart, “Confrontation at the OPCW: How Will the International Community Handle Syria and Skripal?” *War on the Rocks*, June 18, 2018, <https://warontherocks.com/2018/06/confrontation-at-the-opcw-how-will-the-international-community-handle-syria-and-skripal/> (Useful overview of the international chemical regime and the politics surrounding Syria's use of chemical weapons and Russia's attempted assassination of Sergei Skripal and his daughter in the United Kingdom.)

Daniel M. Gerstein, “How Genetic Editing Became a National Security Threat,” *Bulletin of the Atomic Scientists*, 25 April 2016, <http://thebulletin.org/how-genetic-editing-became-national-security-threat9362>

Richard Danzig, *Preparing for Catastrophic Bioterrorism: Toward a Long-Term Strategy for Limiting the Risk* (Washington, D.C.: Center for Technology and National Security Policy, National Defense University, May 2008), pp. 1-21, 30-34. (Lays out a set of potential biological terrorism scenarios that the author argues should be used for planning biodefenses.)

Milton Leitenberg, “Bioterrorism: Hyped,” *Los Angeles Times*, 17 February 2006. <http://articles.latimes.com/2006/feb/17/opinion/oe-leitenberg17> (Argues the bioterrorist threat is modest, and U.S. biodefense spending may be counterproductive.)

Ian Lipkin, “The Real Threat of ‘Contagion’” *New York Times*, 11 September 2011, http://www.nytimes.com/2011/09/12/opinion/the-real-threat-of-contagion.html?_r=0

Recommended Reading

Arms Control Association, “Chemical Weapons: Frequently Asked Questions” (Washington, D.C.: ACA, June 2018), <https://www.armscontrol.org/factsheets/Chemical-Weapons-Frequently-Asked-Questions>

Richard Danzig, Marc Sageman, Terrance Leighton, Lloyd Hough, Hidemi Yuki, Rui Kotani, and Zachary M. Hosford, *Aum Shinrikyo: Insights into How Terrorists Develop Biological and Chemical Weapons*, 2nd ed (Washington, D.C.: Center for a New American Security, 2012). https://s3.amazonaws.com/files.cnas.org/documents/CNAS_AumShinrikyo_Danzig_1.pdf?mtime=20160906080509 (A remarkable study exploring how Aum Shinrikyo made their nerve gas, and the organizational oddities and mistakes that limited its impact – based on interviews with jailed participants in Aum’s program.)

Paul Walker, “Abolishing Chemical Weapons: Progress, Challenges, and Opportunities,” *Arms Control Today*, November 2010, https://www.armscontrol.org/act/2010_11/Walker (A useful overview -- but as it was written before the Syrian civil war, the issues surrounding the chemical use by the Syrian government and the Islamic State are not addressed.)

Milton Leitenberg, *Assessing the Biological Weapons and Biological Terrorism Threat* (Carlisle, Penn: Strategic Studies Institute, U.S. Army War College, December 2005) <http://ssi.armywarcollege.edu/pdf/files/pub639.pdf> (A more detailed version of the argument that the bioterrorism threat is modest.)

Jeanne Guillemin, *Biological Weapons: From the Invention of State-Sponsored Programs to Contemporary Bioterrorism* (New York: Columbia University Press, 2006)

Gregory Koblenz, *Living Weapons: Biological Warfare and International Security* (Ithaca, N.Y.: Cornell University Press, 2009)

Gregory Koblenz, “Pathogens as Weapons,” *International Security*, Vol. 28, No. 3 (Winter 2003/2004), pp. 84-122, <https://www.belfercenter.org/sites/default/files/legacy/files/koblenz.pdf>

Matthew Meselson and Julian Perry Robinson, “A Draft Convention to Prohibit Biological and Chemical Weapons Under International Criminal Law,” *Fletcher Forum of World Affairs*, Vol. 28, No. 1, Winter 2004, pp. 57-72, <https://sites.fas.harvard.edu/~hsp/crim01.pdf>

“Technical Aspects of Chemical Weapons Proliferation,” (pp. 15-69) and “Technical Aspects of Biological Weapons Proliferation,” (pp. 71-117) in Office of Technology Assessment, *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA, December 1993) <http://ota.fas.org/reports/9344.pdf>

The Bi-Partisan WMD Terrorism Research Center, *Bio-Response Report Card* (Washington D.C.: WMD Center, 2011) <http://www.documentcloud.org/documents/256006-bio-response-report-card-2011.html> (Argues that U.S. biodefenses are still much too weak.)

John Steinbruner, Elisa D. Harris, Nancy Gallagher, Stacy M. Okutani, *Controlling Dangerous Pathogens: A Prototype Protective Oversight System* (College Park, Md: Center for International and Security Studies at Maryland, University of Maryland, March 2007) https://drum.lib.umd.edu/bitstream/handle/1903/7949/pathogens_project_monograph.pdf?sequence=1&isAllowed=y (Makes the case for broad transparency as a central element of responding to the biological warfare threat.)

Jonathan B. Tucker and Raymond A. Zalinskas, "The Promise and Perils of Synthetic Biology," *The New Atlantis*, No. 12, Spring 2006, pp. 25-45,
<http://www.thenewatlantis.com/publications/the-promise-and-perils-of-synthetic-biology>

3 December: Simulation: National Security Council Meeting on Emerging Proliferation Issue

[Readings to be provided.]

5 December: Semester overview; careers in nuclear risk reduction

[No readings.]